

IN THE SPECIFICATION:

Please amend the specification as follows:

1. Amend the paragraph at page 1, lines 3-13:

The present invention relates to a method for controlling the amount of information in retransmission data packets transmitted from a transmitting entity to a receiving entity via at least one data channel using a hybrid automatic repeat request protocol. Further, the present invention provides a receiving entity and a transmission entity both adapted to perform the respective method steps. Moreover, a communication system is provided which comprises at least one receiving entity and at least one receiving entity. ~~The present invention further provides a computer-readable medium for storing instructions that, when executed on a processor, cause the processor to control the amount of information in retransmission data packets transmitted from a transmitting entity to a receiving entity via at least one data channel using a hybrid automatic repeat request protocol and soft combining of received data.~~

2. Amend the paragraph bridging pages 2 and 3:

When employing chase combining the retransmission packets carry identical symbols. In this case the multiple received packets are combined either by a symbol by symbol or by a bit by bit basis (see D. Chase: "Code combining: A maximum-likelihood decoding approach for combining an arbitrary number of noisy packets", IEEE Transactions on Communications, Vol. COM-33, pages 385 to 393, May 1985, incorporated herein by reference). These combined values are stored in the soft buffers of respective HARQ processes.

3. Amend the paragraph at page 4, lines 2-11:

The high level R99/4/5 architecture of Universal Mobile Telecommunication System (UMTS) is shown in Fig. 1 (see 3GPP TR 25.401: "UTRAN Overall Description", available from <http://www.3gpp.org>, incorporated herein by reference). The network elements are functionally grouped into the Core Network (CN) 101, the UMTS Terrestrial Radio Access Network (UTRAN) 102 and the User Equipment (UE) 103. The UTRAN 102 is responsible for handling all radio-related functionality, while the CN 101 is responsible for routing calls and data connections to external networks. The interconnections of these network elements are

defined by open interfaces (Iu, Uu). It should be noted that UMTS system is modular and it is therefore possible to have several network elements of the same type.

4. Amend the paragraph at page 4, lines 25-31:

Uplink enhancements for Dedicated Transport Channels (DTCH) are currently studied by the 3GPP Technical Specification Group RAN (see 3GPP TR 25.896: "Feasibility Study for Enhanced Uplink for UTRA FDD (Release 6)", available at <http://www.3gpp.org>, incorporated herein by reference). Since the use of IP-based services become more important, there is an increasing demand to improve the coverage and throughput of the RAN as well as to reduce the delay of the uplink dedicated transport channels. Streaming, interactive and background services could benefit from this enhanced uplink.

5. Amend the paragraph at page 6, lines 14-25:

Every MAC-eu entity corresponds to a user (UE). In Fig. 6 the Node B MAC-eu architecture is depicted in more detail. It can be noted that each HARQ Receiver entity is assigned certain amount or area of the soft buffer memory for combining the bits of the packets from outstanding retransmissions. Once a packet

is received successfully, it is forwarded to the reordering buffer providing the in-sequence delivery to upper layer. According to the depicted implementation, the reordering buffer resides in S-RNC during soft handover (see 3GPP TSG RAN WG 1, meeting #31: "HARQ Structure", Tdoc R1-030247, available of <http://www.3gpp.org>, incorporated herein by reference). In Fig. 7 the S-RNC MAC-eu architecture which comprises the reordering buffer of the corresponding user (UE) is shown. The number of reordering buffers is equal to the number of data flows in the corresponding MAC-eu entity on user equipment side. Data and control information is sent from all Node Bs within Active Set to S-RNC during soft handover.

6. Amend the paragraph at page 7, lines 21-24:

In this section some frequently used terms will be briefly defined and some procedures connected to mobility management will be outlined (see 3GPP TR 21.905: "Vocabulary for 3GPP Specifications" available at <http://www.3gpp.org>, incorporated herein by reference).

7. Amend the paragraph at page 9, lines 5-17:

The principle of this scheduling approach is to allow Node B to control and restrict the transport format combination selection of the user equipment by fast TFCS restriction control. A Node B may expand/reduce the "Node B controlled subset", which user equipment can choose autonomously on suitable transport format combination from, by Layer-1 signaling. In Node B controlled rate scheduling all uplink transmissions may occur in parallel but at a rate low enough such that the noise rise threshold at the Node B is not exceeded. Hence, transmissions from different user equipments may overlap in time. With Rate scheduling a Node B can only restrict the uplink TFCS but does not have any control of the time when UEs are transmitting data on the E-DCH. Due to Node B being unaware of the number of UEs transmitting at the same time no precise control of the uplink noise rise in the cell may be possible (see 3GPP TR 25.896: "Feasibility study for Enhanced Uplink for UTRA FDD (Release 6)", version 1.0.0, available at <http://www.3gpp.org>, incorporated herein by reference).

8. Amend the paragraph bridging pages 12 and 13:

A retransmission protocol with asynchronous HARQ feedback information uses sequence numbers (SN) or other explicit identification of the feedback messages whereas protocols with synchronous HARQ feedback information identifies the feedback messages based on the time when they are received, as for example in HSDPA. Feedback may be sent on the HS-DPCCH after a certain time instant upon having received the HS-DSCH (see 3GPP TR 25.848: "Physical Layer Aspects of High Speed Downlink Packet Access", version 5.0.0, available at <http://www.3gpp.org>, incorporated herein by reference).

9. Please delete the two paragraphs at page 15, lines 15-18.

10. Amend the paragraph at page 15, lines 23-26:

The method may comprise ~~the steps of~~ transmitting a data packet from the transmitting entity to the receiving entity and receiving a feedback message from the receiving entity at the transmitting entity, wherein the feedback message indicates whether the data packet has been successfully received by the receiving entity.

11. Amend the paragraph bridging pages 16 and 17:

Further, in an alternative embodiment of the present invention the method may further comprise ~~the step of~~ soft combining the retransmission data packet and the transmitted data packet at the receiving entity at the receiving entity to obtain a combined data packet.

12. Amend the paragraph at page 17, lines 8-10:

In another embodiment, the method may further comprise the ~~step of~~ determining the amount of information for the retransmission data packet at the receiving entity based on the reception quality of the data packet or the combined data packet.

13. Amend the paragraph at page 17, lines 20-26:

According to a further embodiment of the present invention, a receiving entity for receiving data packets from a transmitting entity via at least one data channel using a hybrid automatic repeat request protocol and soft combining of received data is provided. The receiving entity may comprise a receiving means unit for receiving a data packet from the transmitting entity and a transmitting means unit for transmitting a feedback

message to the transmitting entity, wherein the feedback message indicates whether the data packet has been successfully received by the receiving entity.

14. Amend the paragraph bridging pages 17 and 18:

The transmitting means unit may be further adapted to transmit a control message to the transmitting entity for the unsuccessfully received data packet in case the feedback message indicates that the data packet has not been received successfully, wherein the control message restricts the amount of information to be sent in a retransmission data packet for the unsuccessfully transmitted data packet, and the receiving means unit may be adapted to receive a retransmission data packet from the transmitting entity comprising an amount of information indicated in the control message.

15. Amend the paragraph at 18, lines 3-4:

In another embodiment of the present invention a receiving entity is provided which may ~~comprise means~~ be adapted to perform the above-outlined method.



16. Amend the paragraph at page 18, lines 6-12:

A further embodiment of the present invention provides a transmitting entity for transmitting data packets to a receiving entity via at least one data channel using a hybrid automatic repeat request protocol and soft combining of received data. According to this embodiment, the transmitting entity may comprise a transmitting means unit for transmitting a data packet from the transmitting entity and a receiving means unit for receiving a feedback message from the receiving entity, wherein the feedback message indicates whether the data packet has been successfully received by the receiving entity.

17. Amend the paragraph at page 18, lines 13-19:

The receiving means unit may be adapted to receive a control message at the transmitting entity for the unsuccessfully received data packet in case the feedback message indicates that the data packet has not been received successfully, wherein the control message restricts the amount of information in a retransmission data packet to be sent for the unsuccessfully received data packet, and the transmitting means unit may be adapted to transmit a retransmission data

packet to the receiving entity comprising an amount of information indicated in the control message.

18. Amend the paragraph at page 18, lines 20-21:

In another embodiment of the present invention a transmitting entity is provided which may ~~comprise means~~ be adapted to perform the above-outlined method.

19. Amend the paragraph at page 19, lines 11-25:

A further embodiment of the present invention relates to a computer-readable medium for storing instructions that, when executed on a processor, cause the processor to control the amount of information in retransmission data packets transmitted from a transmitting entity to a receiving entity via at least one data channel using a hybrid automatic repeat request protocol and soft combining of received data by transmitting a data packet from the transmitting entity, and ~~receiving means~~ for receiving a feedback message from the receiving entity, wherein the feedback message indicates whether the data packet has been successfully received by the receiving entity. In case the feedback message indicates that the data packet has not been received successfully, the instructions may further cause the

processor to control the amount of information in retransmission data packets by receiving a control message to the transmitting entity for the unsuccessfully received data packet, wherein the control message restricts the amount of information in a retransmission data packet to be sent for the unsuccessfully received data packet, and transmitting a retransmission data packet to the receiving entity comprising an amount of information indicated in said control message.

20. Please insert the following new paragraph at page 26, after line 26:

It would be appreciated by a person skilled in the art that numerous variations and/or modifications may be made to the present invention as shown in the specific embodiments without departing from the spirit or scope of the invention as broadly described. The present embodiments are, therefore, to be considered in all respects to be illustrative and not restrictive.